

REMARKS/ARGUMENTS

The June 29, 2005 Office Action has withdrawn previous rejections under 35 U.S.C. §112 second paragraph and 35 U.S.C. §102(b). Applicant thanks the Examiner for the courtesy of her review.

The Office action has maintained a rejection of Claims 1 and 16-26 under 35 U.S.C. §112 first paragraph and Claims 1, 16, 17, 18, 19, 21, 23 and 25 under 35 U.S.C. §102(b), and Claims 1 and 16-26 under 35 U.S.C. §112 second paragraph. In light of the amendments above and the arguments below, applicants respectfully request reconsideration.

Sequence Listing

Applicants have provided a new sequence listing. Sequences 1-33 are identical to those filed previously. Sequences 34-45 are incorporated into the listing from the provisional application from which the above-identified case claims priority (U.S. Serial No. 60/234,588). Applicants note that the provisional was incorporated by reference into the specification. (See page 1 of the specification).

Statement Under 37 C.F.R. §1.821(f)(g)

The sequence listing content of the paper and the computer readable copy are the same. No new matter has been added.

Section 112 Rejections

The Office Action has rejected Claims 1 and 16-26 under 35 U.S.C. §112 first paragraph as failing to comply with the written description requirement.

As to the Examiner's first rejection (first full paragraph of page 3) Applicants have accepted the Examiner's suggestion for Claim 1 and have amended Claims 16, 17 and 18 to recite "nucleic acid".

As to the Examiner's second §112 rejection (beginning at the second full paragraph on page 3 of the Office Action) the Examiner has noted that "Applicants argue that the claimed invention should not be limited to vector-based over-expression of the endogenous YggX gene and submit a declaration by Diana Downs". The Examiner notes "the issue is whether the expression of any heterologous YggX protein provides for the same phenotype (i.e. reducing superoxide damage or increasing resistance of an eubacterial enzyme)".

Applicants enclose a recent experiment by Inventor Diana Downs demonstrating that expression of E. coli and Salmonella YggX in Salmonella will both produce positive results. Attached is a declaration of Inventor Diana Downs describing the experiment. Dr. Downs notes that although the Salmonella protein works better, at the 20 micromolar concentration the E. coli protein is clearly having the same effect. Therefore, the Inventor has shown that expression of nucleic acid encoding the YggX polypeptide is active in a heterologous system. Dr. Downs notes that she believes that these results will hold true across the claimed species because of their identity at the sequence (93%) and structural level. [See, for example, Pomposiello et. al. J. Bact. 185:6624; Osborne, MJ et. al. Protein Sci 14:1673.]

The Examiner asserts that :

the specification as filed does not provide a correlation of particular structure with the claim function for genus of YggX proteins and functional equivalents in heterologous systems. There is no known correlation of structure with the function in the art and the specification does not provide intrinsic evidence of a correlation of structure with function for heterologous expression or any functional complementation.

In response to this comment, Applicants note that the structure of the YggX homologs is very similar. Applicants have merely predicted a functional equivalence for similar structures of homologs known to be functionally equivalent in other ways. In her Declaration, Dr. Downs comments on the consistency of basic metabolic paradigms across

life forms. In biology today structural identity is equated extensively (and often without question reviewers of primary manuscripts) of functional similarity.

Claims 17, 18, 23, 24 and 25 have been rejected as “not drawn to the particularly disclosed homologs of SEQ ID NO:2-33.” Applicants have amended the claims so that claims 18 and 25 are drawn to SEQ ID NOS:2-33. Claims 17 and 23 are now drawn to SEQ ID NOS:34-45, which find their basis in provisional application serial number 60/234,588, from which the above-identified application claims priority and which was incorporated by reference herein. Applicants have submitted a substitute sequence listing and amendment and statement to incorporate this sequence listing.

Section 102(b)

Claims 1, 16, 17, 18, 19, 21, 23 and 25 are rejected under 35 U.S.C. §102(b) as anticipated by Gralnick. Applicants have amended all claims to incorporate limitations from non-rejected claims 20, 22 and 24. (Each claim recites the same limitation.) Therefore, Applicants believe that this §102(b) rejection is moot. Applicants neither acquiesce or nor agree with the Examiner’s §102(b) rejection, but in the interests of speedy prosecution believe that incorporation of the non-rejected step make the rejection moot.

Section 112 first paragraph rejections

Claims 1 and 16-26 are rejected under 35 U.S.C. §112 first paragraph as failing to comply with written description. Applicants have amended the claims so that the comparison is to the same cell, in the absence of the vector-based expression of the YggX gene. In other words, Applicants mean for the comparison to the parental cell, indicating that the YggX protein is not providing super oxide dismutase activity.

The Examiner has rejected claims 19-26 as reciting the gene is “a eubacterial enzyme.” Applicants note that in a discussion of §112 issues in a prior Office Action (mailed 12/22/03), the Examiner noted that “the written description is limited to methods that reduce superoxide damage to eubacterial cell comprising vector-based over-expression of the endogenous YggX gene from said cell, where in said over-expression renders the cells more resistant to superoxide damage.” (see page 5, end of paragraph 1) Applicants now believe that this was a typo in the Examiner’s part and that “bacterial” was meant. Applicants note that elsewhere in the same Office Action (page 8) in discussing a similar §112 rejection the Examiner recites the same statement with “bacterial enzyme” substituted. Applicants have now amended the claims to be drawn to “bacterial enzymes” and point for support to originally filed claim 3.

The Examiner has proffered other §112 second paragraph rejections. Applicants deal with them as follows:

On page 9, first full paragraph, the Examiner notes that claim 1 recites “a vector based expression of “a” YggX gene...” Applicants have modified this claim language and also similar languaging in claim 19.

Claims 18, 23, and 25 are rejected on the recitation of particular genus and species designations. Applicants have now referred to the SEQ ID numbers and believe that this issue is moot.

The Examiner has pointed to an antecedent basis problem in claim 21. Applicants have amended claim 21.

Section 102(b) Rejection

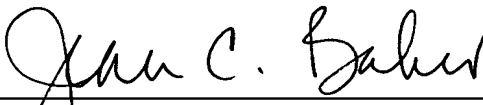
The Office Action has rejected claims 1, 16, 17, 18, 19, 21, 23 and 25 under 35 U.S.C. §102B as being anticipated by Gifford et al. Applicants neither agree nor acquiesce with the Examiner's characterization of Gifford et al but note that limitations for non-rejected claims 20, 22 and 24 have been incorporated into the pending claims. Thus, Applicants believe that this rejection is moot.

Applicants respectfully ask that the Examiner reconsider her rejections. Applicants have enclosed a Petition for 3 months extension of time. No other fees are believed necessary to enter this response.

However, if any other fees are necessary, please charge Deposit Account 17-0055.

Respectfully submitted,

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